Floodplain Management *Today*

NEBRASKA DEPARTMENT OF NATURAL RESOURCES FLOODPLAIN SECTION SEPTEMBER 2012

2012 Discovery Projects

By Rebecca Groshens and Andrew Christenson

In the spring of 2012, the Federal Emergency Management Agency (FEMA), along with assistance from the Nebraska Department of Natural Resources (NDNR), initiated the Discovery process for two watersheds in Nebraska, the Lower Elkhorn watershed and the Lewis and Clark Lake watershed. Discovery is the first phase in FEMA's new Risk Mapping, Assessment, and Planning (Risk MAP) program. Risk MAP is designed to help communities work together with FEMA to identify, to assess, and to reduce flood risk.

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Discovery is the process that allows FEMA and watershed stakeholders to gain a more comprehensive and holistic understanding of the flood risk and flood mitigation capabilities within a watershed. It relies heavily on communication with watershed stakeholders and it is typically the first opportunity for watershed stakeholders to share their flood concerns with FEMA and other watershed stakeholders.

Once watersheds were selected for Discovery, FEMA worked closely with NDNR to carry out Discovery. The first step was identifying potential stakeholders. These stakeholders typically represented organizations who are concerned with flooding and included individuals from Federal, State, Tribal, County, and local levels of government. Stakeholders were contacted by phone or email interviews and interested stakeholders were sent a Discovery Survey, a Pre-Discovery Newsletter, and a Community Map for data collection purposes. Data gathered during Discovery included information that influences flood risk decision-making (e.g., new engineering studies or highly-accurate elevation data), historical flooding information, existing flood hazard data, and mitigation activities.

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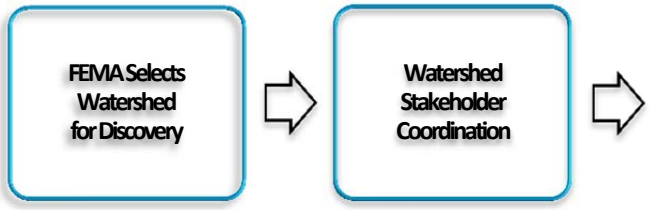
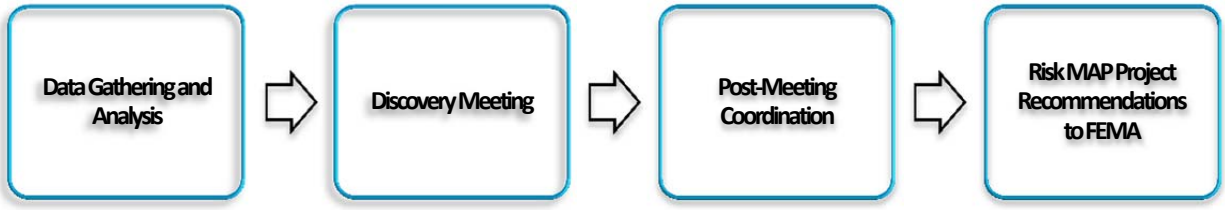


2012 Discovery Projects *(Continued from page 1)*



In addition to gathering data from watershed stakeholders during data analysis, NDNR used several of FEMA's datasets: Letters of Map Change (LOMCs), clusters of LOMCs typically indicate a need for map improvement; the Coordinated Needs Management Strategy (CNMS) data, which is FEMA's method for tracking engineering studies used to create Flood Insurance Rate Maps (FIRMs); HAZUS Average Annualized Loss (AAL) data, which calculates financial losses due to flood damage; and flood insurance-related data from the National Flood Insurance Program (NFIP). Once gathered, the Discovery Lead analyzed the data and produced draft Discovery Products to share with stakeholders at the Discovery Meeting. The draft products included a draft Discovery Report summarizing the data analysis and draft Discovery Maps showing the data available within the watershed.

Watershed stakeholders review the draft Discovery Map at the Lower Elkhorn Discovery Meeting in Fremont, Nebraska.

The next step was to schedule and hold Discovery Meeting(s) within the watersheds. All identified stakeholders were invited to attend and share their flood concerns. Two meetings were held in the Lower Elkhorn watershed and one meeting was held in the Lewis and Clark Lake watershed. All three meetings were well attended with approximately fifteen to twenty stakeholders at each meeting. Following a short presentation on Risk MAP and Discovery, the Draft Discovery Products were displayed for watershed stakeholders to review and discuss. While data issues and flooding concerns varied at each meeting, the main topics of discussion included: levee accreditation, ice jam flooding, availability of high quality topographic data, and potential mitigation efforts. The meetings also provided another opportunity for the stakeholders to share data/information and to work together with FEMA and NDNR's Discovery Lead to determine which Risk MAP products would be appropriate for the watershed.

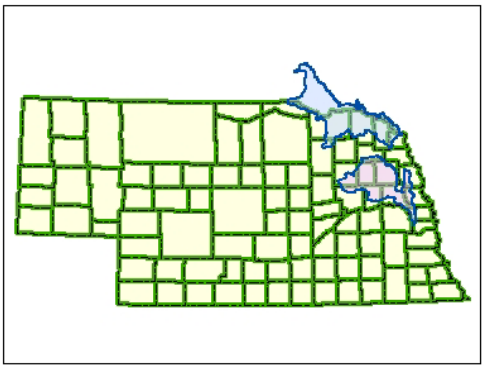
Following the meeting, watershed stakeholders were given thirty days to provide any additional data or comments. After the thirty day comment period, the Discovery Lead finalized and distributed the Final Discovery Products for the watershed to all the watershed stakeholders and to FEMA. These products provide a thorough overview of the flood risks, areas of concern, available flood data, and potential mapping or mitigation projects. A brief summary of the Discovery findings is provided on the opposite page.

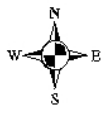
If you would like to know more about Discovery in the Lower Elkhorn or the Lewis and Clark Lake watershed, please contact Rebecca Groshens, Lewis and Clark Lake Discovery Lead, or Andrew Christenson, Lower Elkhorn Discovery Lead.

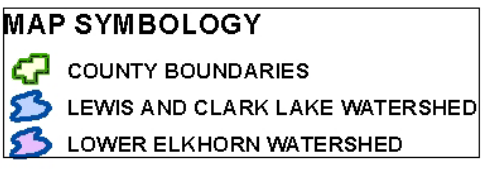
2012 Discovery Project Summary

	Lower Elkhorn	Lewis and Clark Lake
Number of Communities[1]	30	24
Watershed Extent	(See map below)	(See map below)
Major Rivers and Streams	The Elkhorn River, the East and West Forks of Maple Creek, Maple Creek, Union Creek, Taylor Creek, Pebble Creek and Rawhide Creek	The Missouri River, Aowa Creek, Bow Creek, East and West branches of Bow Creek, Beaver Creek, Bazile Creek, and Little Bazile Creek
Meeting Locations	West Point, Nebraska Fremont, Nebraska	Bloomfield, Nebraska
Meeting Dates	April 24, 2012 April 25, 2012	June 1, 2012
Topics of Major Concern	• Levee Accreditation • Ice Jams along the Elkhorn River • Need for updated mapping along the Elkhorn River and in Cuming and Burt Counties	• Mitigation and Recovery from 2011 Missouri River Flooding • Need for updated Mapping in Cedar and Dixon Counties, and portions of Knox County
Completion Date	June 25, 2012	August 3, 2012

[1]Includes Extraterritorial Jurisdictions.







The Stormwater Floodplain Simulation Model

By Nataliya Lys

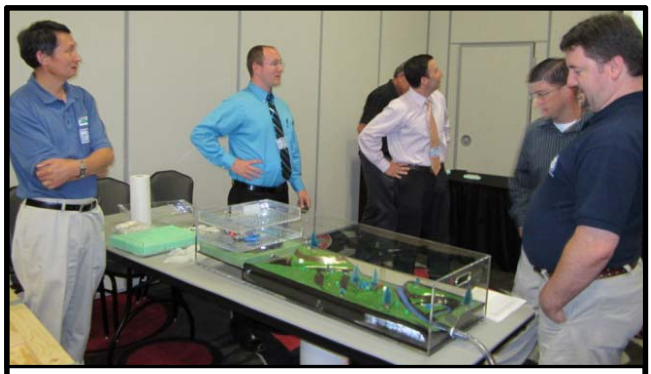
The Nebraska Department of Natural Resources (NDNR), supported by partial funding under a Cooperating Technical Agreement (CTP) with the Federal Emergency Management Agency (FEMA), recently purchased a WARD's Stormwater Floodplain Simulation Model (Floodplain Model). The Floodplain Model is designed for educational and outreach activities demonstrating the importance of floodplains and how unregulated development within a watershed can impact flooding. NDNR purchased the Floodplain Model to raise awareness of the benefits of proper floodplain management practices, to provide free educational activities for the general public, and to promote the profession of floodplain management to students.

Waterfest participants watch the Floodplain Model as the "rain" begins on a parking lot flood scenario.

The Floodplain Model is a large-scale, visually striking, hands-on model; it consists of a large acrylic tank that features colorful resin landform insets with a variety of accessories for enacting a realistic environment. The model features two rainmaker trays and three headwater trays. The two rainmaker trays offer two different "rain" intensities and the three headwater trays are for wetland, parking lot and retention pond simulations. These trays can be set up in various ways to simulate several real world scenarios. Additional materials are provided to construct various flood control structures, such as levees, dams, etc. Participants can witness how stream flows are affected by these structures and their impact on downstream communities during high stream runoff. In addition, participants can measure flood stages and create a hydrograph of the stream flow. More importantly, experiments with the different flood simulation options will allow participants to find and test solutions for flooding problems.

The model has already generated interest from County Officials and Natural Resources Districts (NRDs). NDNR presented the Floodplain Model at Waterfest, a biennial water festival, in Lincoln on June 9th, 2012, and at the Annual Nebraska Floodplain and Stormwater Managers Association (NeFSMA) Conference in Kearney, on July 12th, 2012. Also, on August 25th, the model was demonstrated at Omaha's "World O! Water" event.

NDNR has trained staff to offer floodplain modeling demonstrations at local schools or events. The Floodplain Model offers FREE, hands-on, educational activities for students and adults that can be easily accommodated for most settings. If you would like the Floodplain Model shown at your school or event, just give us a call and we would be happy to schedule your floodplain simulation class.



NeFSMA conference attendees inspect the Floodplain Model.

Pathways to Mitigation – Managing Flood Risk

By John Callen

Many communities in Nebraska are still working to recover from major flooding that occurred in 2011, and despite the current drought conditions, major flooding is likely to occur in floodprone areas again in the future. While regulatory oversight for new construction and development in flood hazard areas is in place for communities that participate in the National Flood Insurance Program (NFIP), it is also important to mitigate flood risk for existing structures and several programs have been established for this purpose. Many of these programs can be especially valuable for structures that have recently experienced high levels of damage, are in areas that could potentially experience high levels of damage, or have experienced repetitive losses over time. The following is a listing of some of the mitigation opportunities and resources available in Nebraska, the type of assistance they may potentially provide, and the typical minimum eligibility requirements.

- **Hazard Mitigation Grant Program** (HMGP) – this is a federal grant program that is administered by the Nebraska Emergency Management Agency (NEMA) and can provide up to 75% of the cost of a mitigation project. Funding for this grant program is based on the damages from federally declared disasters and therefore varies from year to year. This program can potentially assist with acquisition and demolition or relocation of floodprone structures, elevation of floodprone structures, or smaller scale flood protection projects (but not dams or levees) if they reduce flood risk to specific structures that are at risk. Basic eligibility requirements may include the community having a hazard mitigation plan, the community participating in the NFIP (if the structure is in a FEMA identified flood hazard area), and a project benefit/cost ratio greater than one. Although eligibility does not require that the structure(s) be damaged by recent flooding or be located within the disaster area, these areas do typically take priority.

- **Flood Mitigation Assistance** grant (FMA) – this is a federal grant program specifically aimed at mitigating structures at risk of flooding and is administered by the Nebraska Department of Natural Resources (NDNR). Recent NFIP reform legislation will also place two previously separate programs, Repetitive Flood Claims (RFC) and Severe Repetitive Loss (SRL), under the FMA program henceforth. Due to this, FMA will also focus on repetitive loss properties (two flood insurance claims exceeding $1,000 each in a ten year period) and severe repetitive loss properties (four claims exceeding $5,000 each or two claims that exceed the market value of the structure). Funding for the FMA program occurs on an annual basis and the potential federal cost share for a project varies depending on whether the structure is repetitive loss or severe repetitive loss but is typically a minimum of 75%. Potential projects and eligibility requirements are similar to the HMGP program, with the additional requirement that the subject property carries flood insurance.

- **Increased Cost of Compliance** coverage (ICC) – this is a component of every standard flood insurance policy that may assist individual flood insurance policy holders with the cost of mitigation for non-compliant structures substantially damaged by flooding. For those seeking mitigation alternatives after substantial flood damage occurs, ICC can provide up to $30,000 to bring the structure into compliance with local floodplain management requirements. *(Continued on page 6)*

Hazard Mitigation Opportunities *(Continued from page 5)*

This may include the cost of elevating, relocating, or demolishing a structure. ICC coverage and applicability is handled on a case by case basis and eligibility may vary depending on individual circumstances.

- **Natural Resources Districts** (NRDs) – the NRDs generally support floodplain management efforts and can often assist with mitigation projects in some way. This may be through an NRD's programs specifically designed to help with mitigation of floodprone structures or by assisting with meeting local cost share requirements of federal grants. Eligibility varies depending on the nature of the project and availability of funds.

- **Community Rating System** (CRS) – this is a voluntary program under the NFIP that provides the potential to receive discounts on flood insurance premiums for policies in the participating community. In order to receive these discounts, the community must implement floodplain management activities that go beyond the minimum requirements of the NFIP. While not a direct mitigation program, the benefit of the CRS is that participation can further enhance floodplain management within the community, which may assist with a proactive approach to mitigation of floodprone structures.

Each of these programs, either by themselves or in combination with other programs, can provide significant mitigation opportunities and tools to communities with floodprone areas within the State. They also all have unique eligibility and participation requirements. If you have further questions about any of these programs or would like assistance determining which program may be applicable to a potential project, contact John Callen.

Mark Your Calendar

NFIP Community Rating System (CRS) Training Opportunity

The Nebraska Department of Natural Resources (NDNR) is pleased to announce an upcoming training opportunity for communities wanting to learn more about the NFIP's Community Rating System program. This opportunity is being brought to Nebraska by FEMA's Emergency Management Institute (EMI) from Emmitsburg, Maryland and is EMI course E-278. The four day class will be held at the Nebraska State Office Building in Lincoln, Nebraska.

Dates: October 29th – November 1st, 2012

Location: Nebraska State Office Building, 301 Centennial Mall South, Lincoln, NE

Prerequisites: EMI course E-273, or CFM certification, or two years of experience in floodplain management. Priority will be given to local government officials.

Costs: $20.00 to cover basic refreshments throughout the week (lunches are not included). Plus lodging costs, if applicable.

For more information on EMI Course E-278 or the Emergency Management Institute, see the EMI website at http://training.fema.gov/emi/.

Application materials for the course will be distributed by the NDNR. For more information or to express interest, please contact Bill Jones, CFM at (402) 471-3932 or bill.jones@nebraska.gov.

Verification of Compliance

By Bill Jones

All community floodplain management regulations include minimum state and federal requirements. Within Title 44 of the Code of Federal Regulations 60.3 (b) (5) (i) the regulations state: ***"Obtain the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new and substantially improved structures, and (ii) Obtain, if the structure has been floodproofed in accordance with paragraph (c)(3)(ii) of this section, the elevation (in relation to mean sea level) to which the structure was floodproofed, and (iii) Maintain a record of all such information with the official designated by the community under 59.22 (a)(9)(iii)."***

Essentially, this means the community must obtain "As-Built" elevation and floodproofing data, post construction, for permitted buildings and must retain these records.

Recently the question has been brought to our attention of how a community can obtain this information when it is not provided in a timely manner by the developer or builder.

The floodplain development permit issued at the start of construction must be considered a "conditional" permit that allows the development to take place. Elevation information is needed to ensure that the conditions of the permit are met. Failure to provide the information by the developer may not be clearly addressed in the model ordinance as a violation, but neglecting to verify, record and maintain records is a failure of the community to follow the federal regulations. The current FEMA Elevation Certificate requires photos to assist in documenting compliance.

One suggested means to obtain this elevation data would be for a community to "adopt" administrative procedures that would require proof of post construction elevation in the permit process.

Want to Learn More About Elevation Certificates or Other Floodplain Management Topics?

- ✓ Take a training course at FEMA's Emergency Management Institute (EMI). http://training.fema.gov/emi/
- ✓ Attend a FREE webinar offered by the Strategic Alliance for Risk Reduction (STARR). http://j.mp/starrwebtraining

Another suggested option is a letter provided to the developer giving them a period of time to provide documentation of compliance, or the information will be obtained by an agent of the community and the developer/owner will be billed for that service.

Yet another option is to require the proof of elevation before the community would schedule the final building inspection prior to allowing occupancy of the building. Support and guidance from the community's legal counsel is important to ensure that the procedures put in place by any of these options are legal in your community and supported by that office.

There may be other creative methods that are being employed for obtaining the "As-Built" elevation certificate. The important point is that this element of floodplain regulations ensures that the developer will meet the requirements of the ordinance and the structure is built to be safe from identified flood risks. Failure of a community to verify, record and maintain records could jeopardize a community's participation in the National Flood Insurance Program and may also cause owners of buildings in the floodplain within that community to have problems obtaining flood insurance.

Floodplain Management *Today*
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WANT MORE INFORMATION?

Visit NDNR's Floodplain Website at
http://dnr.ne.gov/floodplain/floodplain.html

Or Contact

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